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NOTES ON THE FLORA OF THE ROSEBUD INDIAN RESERVATION, SOUTH DAKOTA.

By ALBERT B. REAGAN, Rosebud, S. Dak.

THE Rosebud Indian reservation is situated in South Dakota, south of Big White river, and extends from about the middle south line of the state east to the Rosebud lands opened for settlement in 1904. It is bounded on the north by Big White river, on the east by Gregory county (the land opened up for settlement), on the south by Nebraska, and on the west by the Pine Ridge Indian reservation. The soil is sandy Loup Fork Tertiary, Miocene clays or Cretaceous black shales as one proceeds northeast across the reservation from its southwest corner. In the eastern part of this area and in the valley regions the Minnesota and east Nebraska flora prevails; in the medium elevated regions, that of the high plains; and on the high points and in the western part of the reservation, that of the Rocky Mountains. Many Canadian species are also met with. The country in early spring to the middle of the summer is a rose-flower region; hence the name, Rosebud. The Leguminosæ are also prominent flowers, but, though more numerous in species than the Rosaceæ, are less conspicuous. In the summer the Leguminosæ and the Evening Primrose family vie with each other. The predominating flowers of the fall season are those of the Compositæ. The grass family is represented by numerous species, which are themselves very variable. The trees are usually low and spreading, and are usually found only along the streams.

The following list of identified plants are the result of the author's observations during the spring, summer and fall of 1904. The work was carried on as time would permit, and, consequently, contains only a small part of the plants of the region.

The books used in identifying the plants were Wood's "Eastern Botany," Bessey's "Botany for High Schools and Colleges," Gray's "Lessons and Manual of Botany," and Coulter's "Manual of Rocky Mountain Botany."

The date in parentheses is that on which the first bloom of that respective plant appeared.

Ranunculaceæ:

Anemone carolinana Walt.

Numerous.

Delphinium azureum Michx. Larkspur.

Common.

Caltha palustris Linn. Marsh marigold.

Common in low places.

Cruciferae:

Brassica arvensis. Mustard.

Only one plant was seen, on the Butte Creek wagon-road, one mile east of the Widow Dire's place (specimen not native).

Lepidium intermedium Gray. Peppergrass.

Dry places, yards, roadsides, etc.

Camelinia sativa Crantz. False flax.

Common.

Violaceae:

Viola cucullata Gray.

Common in valleys.

Viola sagittata Ait. Arrow-leaved violet.

Common in damp places (April 6).

Viola delphinifolia. Blue violet.

Common (May 16).

Viola rotundifolia Michx. Yellow violet.

Portulacaceae:

Portulaca retuso Engelm. Purslane.

Grows very profusely on dams and cultivated grounds.

Portulaca pilosa Linn.

Common, but not so profuse as the species above.

Malvaceae:

Malvastrum coccineum Gray. False mallow.

Linaceae:

Linum sulcatum Ridell. Wild flax.

Dry soil; common (June 1).

Geraniaceae.

Oxalis corniculata Linn. Yellow wood-sorrel.

Common.

Vitaceae.

Vitis æstivalis Michx. (same grape, var. *bicolor*, LeConte).

Sapindaceae.

Negundo aceroides Moench. Box-elder.

Common along streams.

Anacardiaceae.

Rhus glabra Linn. Sumach.

Rhus copallina Linn. Dwarf sumach.

Rhus toxicodendron Linn. Poison-ivy.

Rhus trilobata Nutt. (*R. canadensis*, var. *trilobata*, Gray). Sumach.

The four *Rhus* species above are very common. The poison-ivy is found in the valleys, even away from the timber.

Leguminosae.

Baptisia leucophæa Nutt. False indigo.

Tephrosia virginiana Pres. Goat's-rue.

Tephrosia?

Astragalus caryocarpus Ker. Ground plum (May-June).

Astragalus pattensis Nutt. (May 14.)

- Astragalus missouriensis?* Nutt.
Astragalus cooperi Gray. (May 14.)
Astragalus?
Astragalus villosus Michx. (May-June.)
Orobanchaceae atropurpurea? (May 14.)
Psoralea tenuiflora Pursh.
Psoralea argophylla Pursh.
Psoralea esculenta Pursh.
Desmanthus brachylobus Benth.
 Found principally in semiwet places.
Schrankia uncinata Willd. Sensitive brier.
 Very common on middle uplands.

Rosaceæ.

- Prunus*, like *P. chicensis*.
 Numerous in thickets along stream (May 5).
Prunus rosebudii. Rosebud dwarf plum. (New species.)
 Plant erect or decumbent, growing singly or in bunches from a common root stalk, six inches to one foot in height; leaves obovate-lanceolate; flowers two to four together; fruit ovoid, nearly black when ripe, sour and astringent in taste; stone large. Rocks and sandy banks.
Prunus virginiana Linn. Choke-cherry.
 Banks; numerous.
Rosa humilis Marsh. Wild rose.
 Everywhere; species very variable, flowers ranging in color from white to scarlet (June 18).
Rosa woodsii Lindl.
Rosa arkansana Porter.
Rosa rubiginosa.
 The last three species are found on the reservation, the latter probably escaped from cultivation.
Crataegus coccinea, var. *macracantha*, Dudley. Hawthorn.
 Only one specimen of this species was seen, at the head of Horse creek, about eight miles southwest of the White Thunder day school.
Ribes oxycanthoides Linn. Gooseberry.
 Not common.
Ribes floridum L'Her. Wild black currant.
 Common on banks of streams (April 26).
Ribes aureum Pursh. Buffalo currant.
 Common (April 20).

Onagraceæ.

- Oenothera biennis* Linn.
Oenothera pinnatifida Nutt.
Oenothera albicaulis Nutt.
Oenothera coronopifolia Torr. & Gray.
Oenothera parviflora Watson.
 These Evening primroses are the most common flowers in the late summer and early fall, the flowers of the *Compositæ* family excepted.
Gaura coccinea Nutt.

Mentzelia nuda Torr. & Gray.
Mentzelia ornata Torr. & Gray.

Cucurbitaceæ.

Cicyos angulatus Linn.
 Banks and damp, wooded ground.

Cactaceæ.

Mamillaria vivipera Haw. Cactus.
Mamillaria missouriensis Sweet.
Opuntia rafinesquii Engelm. Prickly-pear.
 These three species of cactus are found on the dry prairies and the broken country.

Umbelliferae.

Polytænia nuttallii Dc.
 Everywhere in early spring (April 1).
Peucedanum fœniculaceum Nutt.
Peucedaneum villosum Nutt. (April 1).

Compositæ.

Erigeron annuus Pers. Daisy fleabane.
Ambrosia artemisiæfolia Linn. Hogweed.
Xanthium strumarium Linn. Cockle-bur.
 Too common.
Chrysanthemum leucanthemum Linn. Whiteweed.
 A pernicious weed everywhere.
Krigia virginica Willd. Dwarf dandelion.
 Very common, usually flourishing best in the middle uplands.
Helianthus annuus Linn. Common sunflower.
Helianthus orgyalis Dc.
Helianthus grosse serratus Martens.
Helianthus maumiliani Schrader.
Helianthus subcanescens Gray.
Solidago nemoralis, var. *incana*, Gray. Goldenrod.
Cincus lanceolatus Hoffm. Common thistle.
 Common on broken ground.
Bidens bipinnata Linn. Spanish needle.
 Few and scattering.

Lobeliaceæ.

Lobelia inflata Linn. Indian tobacco.
 Common; used as Indian medicine.

Oleaceæ.

Fraxinus americana Linn. White ash.
 Moist woods.
Fraxinus pubescens Linn. Red ash.
 Common along streams.

Asclepiadaceæ.

Asclepias cornuti Descaisne. Common milkweed.
Asclepias verticillata Linn., var. *pumula* Gray.

Boraginaceæ.

Echinospermum floribundum Lehm. Beggar-lice.

Echinospermum lappula Lehm.

Echinospermum redowskii Lehm.

The three lice-weed species are very common in the wooded districts.

Lithospermum hirtum Lehm. Puccoon.

Common.

Lithospermum angustifolium Michx.

Same as *L. hirtum*.

Convolvulaceæ.

Ipomœa purpurea Lam. Common morning-glory.

Escaped from cultivation (May 20).

Ipomœa leptophylla Torr. Wild morning-glory.

Common along watercourses.

Solanaceæ.

Solanum rostratum Dunal.

A common weed.

Verbenaceæ.

Verbena hastata Linn.

Verbena bracteosa Michx.

Labiatæ.

Isanthus cæruleus Michx. False pennyroyal.

Common.

Mentha canadensis Linn. Wild mint.

Common.

Hedonia hispida Pursh. Pennyroyal.

High, sandy points.

Salvia lanceolata Willd. Sage.

Very common.

Monarda punctata Linn. Horsemint.

Very common in the valleys.

Teucrium occidentale Gray.

Nepeta cataria Linn. Catnip.

Not common.

Plantaginaceæ.

Plantago major Linn. Common plantain.

Amarantaceæ.

Amarantus albus Linn. Tumbleweed.

Very common.

Chenopodiaceæ.

Chenopodium album Linn. Pigweed.

Cultivated grounds, everywhere.

Polygonaceæ.

Rumex acetosella Linn. Sheep-sorrel.

Rumex venosus Pursh.

Occasionally seen.

Rumex altissimus Wood. Pale dock.

Rumex crispus Linn. Yellow dock.

Rumex verticillatus Linn. Water dock.

Only one plant of this species was seen.

Aristolochiaceæ.

Shepherdia canadensis Nutt. Yellow buffalo-berry.

This species and the next are to be found in nearly all of the creek valleys of the reservation. The fruit is used much by the Indians.

The whites also use it for making jelly, which they highly prize.

Shepherdia argentea Nutt. Scarlet buffalo-berry.

Utricaceæ.

Ulmus fluva Michx. Red elm.

Common along streams. It grows to be a large tree.

Ulmus americana Linn. White elm.

Not common.

Celtis occidentalis Linn. Hackberry.

Cannabis sativa Linn. Hemp.

Grows in barn-yards and cultivated bottom lands.

Humulus lupulus Linn. Hop.

Common along streams.

Cupuliferæ.

Quercus obtusiloba Wood. Post oak.

Common.

Quercus macrocarpa Michx. Bur-oak.

Banks. This species furnishes over half of the wood of the region.

Quercus macrocarpa, var. *depressa*, Engelm.

A dwarf species found in the deep, dry streams and ravines. It ranges in height from two feet to four feet.

Salicaceæ.

Salix amygdaloides Anders.

Salix rostrata Richardson.

Found on banks and at the water's edge along streams.

Salix longifolia Muhl.

This willow is found principally on White River flat. A bunch was found at the Ring Thunder day school.

Populus monilifera Ait. Cottonwood.

Borders of streams.

Populus heterophylla Wood.

Same as *P. monilifera*.

Coniferæ.

Pinus banksiana Lambert. Northern scrub-pine.

This tree is occasionally met with on the high points of the reservation.

Pinus ponderosa Dougl.

This tree is found on the high points and along the breaks of the Loup Fork (Arickaree) formation.

Juniperus virginiana Linn. Red cedar.

Robison bad lands and on all the other Miocene Clay bad lands of the reservation. It ranges from a scrub to a tree twenty to forty feet in height.

Iridaceæ.

Sisyrinchium angustifolium Mill. Blue-eyed grass.

Common (May and June).

Sisyrinchium anceps Cav. Blue-eyed grass.

Same as *S. angustifolium*.

Liliaceæ.

Nothoscordum striatum Kunth. False garlic.

Very common everywhere.

Yucca angustifolia Pursh. Bear-grass.

Very common, especially on the Miocene formation.

Polygonatum giganteum Deitrich. Great Solomon's-seal.

Common on low ground near the streams.

Smilacina stellata Desf. False Solomon's-seal.

Common in low, wet places (May 1).

Commelinaceæ.

Tradescantia virginica Linn. Spiderwort.

Juncaceæ.

Juncus effusus Linn. Common rush.

Typhaceæ.

Typha latifolia Linn. Cattail flag.

Gramineæ.

Bromus klamii Gray. Wild chess.

Setaria glauca Beauv. Foxtail.

Common in cultivated fields.

Cenchrus tribuloides Linn. Bur grass.

Sandy soil, found principally on the Arickaree formation.

Stipa viridula Tun. Feather-grass.

Agrostis vulgaris With. Redtop.

Scattering here and there.

Bouteloua oligostachya Torr. Grama-grass.

Found only in patches.

Buchloe dactyloides Engelm. Buffalo-grass.

Elymus canadensis Linn. Wild rye.

Poa tenuifolia?. Redtop buffalo-grass.

Very common.

Chrysopogon nutans Benth. Wood-grass.

Festuca ovina Linn. Bunch-grass.

Agropyrum repens Beauv. Bluejoint.

Calamagrostis canadensis.

Common in wet places.

Equisetaceæ.

Equisetum arvense Linn. Horsetail.

Ring Thunder Springs and in all the low, swampy places of the reservation.

Agaricus campestris.

Lycoperdon gigantum.